

REMARKS

Claims 15, 16, 19, 20, and 29-45 are pending in this application. By this Amendment, claims 29, 32-35, 38, 40 and 42 are amended. No new matter is added as the amendments to the claims are made to better clarify the claim features as disclosed in the specification. Reconsideration of the application based on the above amendments and the following remarks is respectfully requested.

Applicant appreciates the courtesies shown to Applicant's representatives by Examiner Graybill in the February 11, 2005 personal interview. Applicant's separate record of the substance of the interview is incorporated into the following remarks.

I. The Drawings Satisfy All Formal Requirements

The Office Action, on page 2, objects to the drawings under 37 C.F.R. §1.83(a). Specifically, the features recited in claims 29, 33, 34, 39 and 40 are alleged not to be shown in the Figures. Claims 29, 33, 34 and 40 are amended to better clarify that the silica insulation filler is mixed in resin. Claim 39 is not amended, but already recites this feature. At least Fig. 1 depicts a first layer including a first resin; and a second layer including a second resin, as is recited, among other features, in independent claims 15 and 36. Varying compositions of those resins are described in the specification at least at pages 2-5. It is these varying compositions of resins that are recited in claims 29, 33, 34, 39 and 40. Applicant has, therefore, complied with the requirements of Rule 83(a). Claims to compositions do not require drawings (see, *e.g.*, MPEP §601.01(f)).

Additionally, it is respectfully noted that claims 29, 33, 34, 39 and 40 do not specify that the silica insulating filler is in the form of particles. It is, therefore, not understood how the drawings, if amended to show "silica insulating filler" within the resin, would be different than they are now. If this objection is maintained, Applicant requests that the Examiner provide a brief concept sketch of how the Examiner believes "silica insulating filler" would

appear in a layer already shown in the drawing. Withdrawal of the objection to the drawings is respectfully requested.

II. The Claims Satisfy Requirements Under 35 U.S.C. §112, First Paragraph

The Office Action, on pages 3 and 4, rejects claims 30, 32-35 and 38-42 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. This rejection is respectfully traversed.

The Office Action alleges that undescribed subject matter includes embodiments comprising the claim 15 feature regarding differing coefficients of thermal expansion between the layers in combination with the specific features recited in claims 30 and 32-25, and embodiments comprising the claim 36 feature regarding differing moduli of elasticity between the layers in combination with the specific features recited in claims 38-42.

The specification, at least at pages 6 and 7, discloses generally the semiconductor device recited in the claims and states that "the binder may be the binder as mentioned above" referring back to at least pages 2-6 of the specification. Each of the specific features enumerated in the rejected claims is disclosed as a feature which the binder may include. There is no disclaimer of any combination of these features, and no reasonable reading of this passage can result in the conclusion that the binder can only include one of the listed features at a time. Thus, those skilled in the art would understand that any combination of these features is a disclosed option. As such, Applicant respectfully submits that the combinations of features recited in claims 30, 32-35 and 28-42 are adequately described in such a manner to satisfy the the 35 U.S.C. §112, first paragraph, written description requirement.

Accordingly, reconsideration and withdrawal of the rejection of claims 30, 32-35 and 38-42 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement, are respectfully requested.

III. The Claims Recite Allowable Subject Matter

The Office Action, on page 5, rejects claims 15, 16, 20, 29-42 and 45 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patents Nos. 5,120,665 to Tsukagoshi et al. (hereinafter "Tsukagoshi") and 6,049,038 to Suzuki. The Office Action, on page 7, rejects claims 19 and 44 under 35 U.S.C. §103(a) as being unpatentable over Tsukagoshi and Suzuki as applied to claims 15 and 36, and further in combination with U.S. Patent 6,344,696 to Nakamura et al. (hereinafter "Nakamura"). The Office Action, on page 9, rejects claim 43 under 35 U.S.C. §103(a) as being unpatentable over Tsukagoshi and Suzuki as applied to claim 36, and further in combination with U.S. Patent 6,333,206 to Ito et al. (hereinafter "Ito"). These rejections are respectfully traversed.

Tsukagoshi discloses a composition comprising epoxy resin type adhesive, particles obtained by coating a nucleus of a curing agent with a film, pressure-deformable electroconductive particles having an average particle size larger than that of the particles, and, if necessary, rigid particles, along with a method of using the composition to connect a semiconductor chip to a wiring substrate (Abstract). The Office Action, on page 6, admits that Tsukagoshi does not explicitly disclose all of the combination of features recited in at least independent claims 15 and 36. The Office Action, on the other hand, looks to Suzuki as filling in for the shortfall of Tsukagoshi in order to find a coefficient of thermal expansion of the "first resin" being smaller than the coefficient of thermal expansion of the "second resin." The Office Action asserts that it would have been obvious to combine the product of Suzuki with the product of Tsukagoshi "because it would improve the product reliability." Applicant respectfully discloses.

First, Suzuki only appears to disclose, with respect to coefficients of thermal expansion resin with different layers having different thermal expansion rates (col. 6, lines 7-24). Thus, if anything, one of ordinary skill would have used Suzuki's single layer to obtain

the effect thereof taught by Suzuki. The resulting structure therefore would not have two resins, as recited in the claims.

Second, the Office Action provides no reference to any specific teaching or suggestion in either of the applied prior art references that it would have been obvious to one of ordinary skill in the art to modify Tsukagoshi with the teachings of Suzuki to obtain a product such as is recited in the claims. Applicant respectfully submits that such a feature would not have been obvious to one of ordinary skill in the art.

MPEP §2143.01 instructs that "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination" (emphasis added). MPEP §2143.01 further instructs that "[a]lthough a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so'" (emphasis added). *See also in re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Applicant respectfully submits that the rejection of at least independent claims 15 and 36 is improper in view of MPEP §2144.03 because in stating the rejection the Office Action lacks the required specific evidence of a teaching, suggestion or motivation to one of ordinary skill to combine the references.

Applicant believes that such a combination of references can only be arrived at through the improper application of hindsight reasoning in view of Applicant's specification as a roadmap for such an analysis.

Further, the Office Action, on page 7, asserts that U.S. Patent No. 5,959,363 to Yamada et al. (hereinafter "Yamada") at col. 3, lines 54-63, evidences the proposition that "filler-induced coefficient of thermal expansion and modulus of elasticity of a resin are inherently indirectly correlated." Yamada states "The coefficient of thermal expansion and elastic modulus of a resin changes with a change in content of a filler ... as the content of a filler is increased, the

coefficient of thermal expansion of a resin decreases, but the elastic modulus thereof increases on the contrary" (col. 3, lines 58-63). Applicant respectfully submits that such an assertion does not make the applied references any more combinable as it does not address the deficiencies noted above.

For at least the above reasons, Applicant respectfully submits that at least claims 15 and 36 would not have been rendered obvious by the combination of Tsukagoshi and of Suzuki. Further, claims 16, 20, 29-35, 37-42 and 45 also would not have been rendered obvious by the combination of the applied references for at least the respective dependence of these claims on independent claims 15 and 36, as well as for the separately patentable subject matter which each of these recites. Finally, regarding claims 19, 43 and 44, Nakamura and Ito do not overcome the shortfalls in the application of Tsukagoshi and Suzuki to at least independent claims 15 and 36. As such, the subject matter of claims 19, 43 and 44 would not have been rendered obvious by the combinations of the applied references for at least the respective dependence of these claims on independent claims 15 and 36, as well as for the separately patentable subject matter which each of these claims recites.

IV. Request under MPEP §707.02

Applicant's representative presented detailed inputs regarding steps to be undertaken to overcome the objections to the drawings and the rejection of claims 30, 32-35 and 38-42 under 35 U.S.C. §112, first paragraph, to Examiner Graybill during the February 11 personal interview. However, the Examiner did not provide feedback in response to the points or proposals presented by Applicant's representative. The Examiner has been gracious in granting a total of three personal interviews to date, one after each of the Office Actions. However, even these personal interviews have not helped Applicant advance prosecution. For this reason, Applicant respectfully requests that, should the Examiner choose to maintain any of (1) the objection to the drawings; (2) the rejection of the enumerated claims under

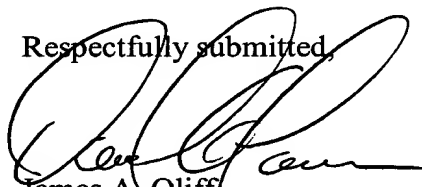
35 U.S.C. §112, first paragraph; or (3) any of the prior art rejections of the Office Action, Applicant's representative be granted a personal interview with Examiner Graybill and Supervisory Patent Examiner. This request is made in accordance with MPEP §707.02.

V. Conclusion

In view of the foregoing, Applicant respectfully submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 15, 16, 19, 20, and 29-45 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number set forth below.

Respectfully submitted,



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